AC

Ruparel 1

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G06F 13/00 — A1

(11) International Publication Number: **WO 99/12100**

(43) International Publication Date: 11 March 1999 (11.03.99)

(21) International Application Number: PCT/US98/14089

(22) International Filing Date: 8 July 1998 (08.07.98)

(30) Priority Data:
08/921,006 — 29 August 1997 (29.08.97) — US

(71) Applicant *(for all designated States except US)*: NORTHERN TELECOM LIMITED [CA/CA]; World Trade Center of Montreal, 8th floor, 380 St. Antoine Street West, Montreal, Quebec H2Y 3Y4 (CA).

(72) Inventor; and

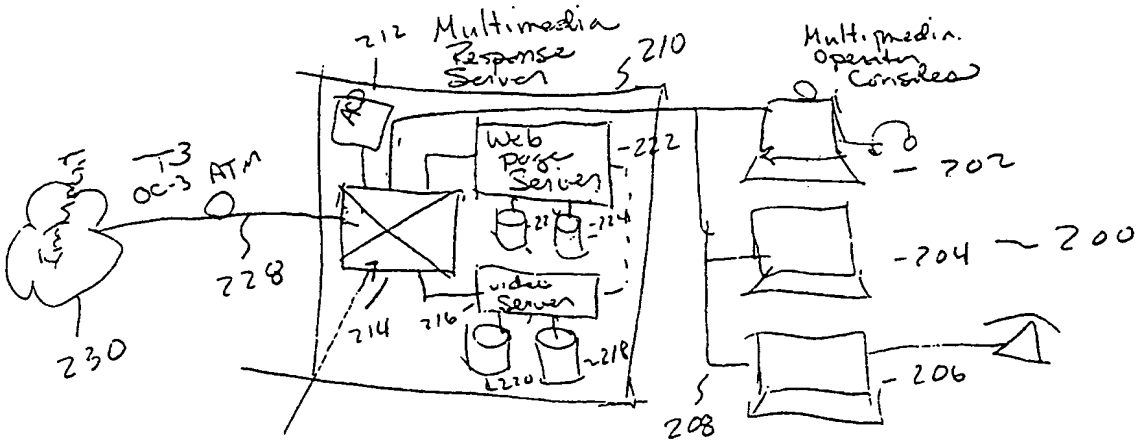
(75) Inventor/Applicant *(for US only)*: STOVALL, Gregory, T. [US/US]; 801 Blossom Road, Garland, TX 75041 (US).

(74) Agent: EDWARDS, Christopher, O.; Northern Telecom, Patent Dept., P.O. Box 832130, Richardson, TX 75083-2130 (US).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(54) Title: METHOD AND APPARATUS FOR WEB INQUIRY RESPONSE VIA INTERNET VIDEO



Communication Channel Switch - Directs communication links to proper device.

(57) Abstract

An interactive data communication user is connected through a network (230) to a multimedia response server (210). The user presses an appropriate keyboard or mouse clicks on an appropriately labeled button on a data page. An automatic call distribution device (212) switches the session to a customer service queue for routing to the next available customer service representative (202). When the interactive session between the user and the customer device representative (202) is completed, session control passes back to the data page server (222) and a normal interactive session is resumed.

BNSDOCID: <WO___9912100A1_I_>

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	ES	Spain	LS	Lesotho	SI	Slovenia
AM	Armenia	FI	Finland	LT	Lithuania	SK	Slovakia
AT	Austria	FR	France	LU	Luxembourg	SN	Senegal
AU	Australia	GA	Gabon	LV	Latvia	SZ	Swaziland
AZ	Azerbaijan	GB	United Kingdom	MC	Monaco	TD	Chad
BA	Bosnia and Herzegovina	GE	Georgia	MD	Republic of Moldova	TG	Togo
BB	Barbados	GH	Ghana	MG	Madagascar	TJ	Tajikistan
BE	Belgium	GN	Guinea	MK	The former Yugoslav Republic of Macedonia	TM	Turkmenistan
BF	Burkina Faso	GR	Greece			TR	Turkey
BG	Bulgaria	HU	Hungary	ML	Mali	TT	Trinidad and Tobago
BJ	Benin	IE	Ireland	MN	Mongolia	UA	Ukraine
BR	Brazil	IL	Israel	MR	Mauritania	UG	Uganda
BY	Belarus	IS	Iceland	MW	Malawi	US	United States of America
CA	Canada	IT	Italy	MX	Mexico	UZ	Uzbekistan
CF	Central African Republic	JP	Japan	NE	Niger	VN	Viet Nam
CG	Congo	KE	Kenya	NL	Netherlands	YU	Yugoslavia
CH	Switzerland	KG	Kyrgyzstan	NO	Norway	ZW	Zimbabwe
CI	Côte d'Ivoire	KP	Democratic People's Republic of Korea	NZ	New Zealand		
CM	Cameroon			PL	Poland		
CN	China	KR	Republic of Korea	PT	Portugal		
CU	Cuba	KZ	Kazakstan	RO	Romania		
CZ	Czech Republic	LC	Saint Lucia	RU	Russian Federation		
DE	Germany	LI	Liechtenstein	SD	Sudan		
DK	Denmark	LK	Sri Lanka	SE	Sweden		
EE	Estonia	LR	Liberia	SG	Singapore		

BNSDOCID: <WO___9912100A1_I_>

METHOD AND APPARATUS FOR WEB INQUIRY RESPONSE VIA INTERNET VIDEO

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates generally to customer response networks and in particular to internet based response networks.

DESCRIPTION OF THE RELATED ART

Many companies establish and maintain home pages on the Internet's World Wide Web. These home pages may provide an electronic market place to users with a computer, appropriate software and internet access. Companies may set up layered directories that provide information in the form of electronic catalogs or brochures. Often a point of contact such as a telephone number or electronic mail address is provided as a link in the event a user requires more information or has a question for the company.

Current data services on the Web are interactive in the sense that information content is provided to a user based on keyboard or mouse input from that user. However, this response is limited to pre-programmed or "canned" text, video and/or audio. As services migrate to higher bandwidth requirements and capabilities there is an increasing demand for interactive videophone sessions.

There is accordingly a need for a new method and apparatus to provide an interactive live video session capability between a user and a company's representative in order to facilitate the transfer of information in an effective real-time manner.

SUMMARY OF THE INVENTION

The method and apparatus of the present invention is accomplished by having a customer or user situated at one of many user computer terminals connected to the Internet. The user accesses a company's World Wide Web Internet home page in an Internet session and decides that more information is needed and would appreciate interacting with a live customer service representative.

The user presses an appropriate keyboard or mouse clicks on an appropriately labeled button on the Web page. An automatic call distribution device switches the session to a customer service queue for routing to the next available customer service representative. When the interactive session between the user and the customer service representative is completed, session control passes back to the web page server and a normal interactive session is resumed.

One advantage of the present invention allows the user and customer service representative to conduct an interactive video session.

Another advantage of the present invention allows the user and customer service representative to conduct an interactive audio session.

Another advantage of the present invention allows the user and customer service representative to conduct an interactive audio/video session.

Still another advantage of the present invention allows the user and customer service representative to both simultaneously view portions of the same display on each of their respective video display monitors.

Further features of the above-described invention will become apparent from the detailed description hereinafter.

The foregoing features together with certain other features described hereinafter enable the overall system to have properties differing not just by a matter of degree from any related art, but offering an order of magnitude more efficient use of processing time and resources.

Additional features and advantages of the invention will be set forth in part in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The advantages of the invention will be realized and attained by means of the

elements and combinations particularly pointed out in the appended claims.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention, as claimed.

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate preferred embodiments of the apparatus and method according to the invention and, together with the description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 illustrates a block diagram of the data network of the present invention.

Fig. 2 illustrates a block diagram of the multimedia response server of the present invention.

Fig. 3 illustrates a flowchart depiction of the methodology of the present invention.

DETAILED DESCRIPTION

Referring now to Fig. 1, the data network 100 of the present invention will now be discussed. A customer or user is situated at one of many user terminals 102,106,110,136,138 which may be a personal computer, graphic

enhanced mobile device such as a laptop PC, Java phone or a personal digital assistant (PDA).

The customer may be connected via an analog or digital (either an Integrated Services Digital Network (ISDN) or xDSL) connection to a Class 5 (local telephone switching) office 108, which in turn is connected to a tandem switch 114. Tandem switch 114 is capable of making both local and toll (long distance) telephone connections and is connected through modem 120, direct connection or ISDN 118 connection to Asynchronous Transfer Mode (ATM) interface 128.

ATM interface 128 is connected to ATM backbone 130. ATM backbone 130 supplies the interconnections and transport mechanisms of the data communications network, or Internet of the preferred embodiment. These transport mechanisms are well known and thus need not be further explained here.

Customers are also connected through terminals 136,138 to the Internet embodied by ATM backbone 130 through Local Area Network (LAN) 134. LAN direct connectivity is an alternative to dial-up connections.

A live person acting as a Company's agent or customer service representative is stationed at agent terminal 124. Terminal 124 contains an autodialer which automatically dials a preprogrammed or an entered telephone number from telephone 122. This telephone number is the

telephone number of the customer who has entered his/her own telephone number sometime during a Web page access session.

The telephone call placed by the Customer service agent located at terminal 124 through telephone 122 is switched through tandem switch 116 to class 5 central office 104 to the customer.

In an alternative embodiment, a customer may be connected through a mobile terminal via a wireless data link provided by a cellular, PCS or other wireless service provider.

Corporate Web Server 132 is connected to ATM backbone 130 through a direct connection.

In an alternate embodiment, the corporate Web Server, stationary or mobile, may also be connected via a similar wireless data link interfaced to the Internet.

Referring now to Fig. 2, Corporate Web Server 200 will now be discussed in further detail. Multimedia response server 210 is connected to the Internet 230 via ATM link 228. ATM link 228 is typically either across a T-3 carrier operating at approximately 44 MHz or is an OC-48 (or higher) Synchronous Optical Network (SONET) connection. The details of such connections are well known and need not be discussed further.

The T-3 interconnection 228 interconnects with Multimedia Response Server 210 at the communication channel switch 214. Communication channel switch 214 is controlled by Web page server 222. Also connected to communication channel switch 214 are the Automatic Call Distribution (ACD) unit 212, video server 216 and multiple multimedia operator consoles 202,204,206.

Communication channel switch 214 is a Northern Telecom Magellan, Vector or other suitable switch.

Web page server 222 operates to supply content to customers who access the Web page, controls connections to and from communication channel switch 214.

Video server 216 supplies high bandwidth video to customers accessing the Web page through communication channel switch 214.

Automatic Call Distribution (ACD) 212 unit operates by transferring a customer who has requested more information into a queue for service by the next available operator stationed at one of the multimedia operator consoles 202,204,206. A customer who is accessing the Web page on the Web server typically mouse clicks on a hot button or link found on the Web page. This link is identified as a channel for selecting a live interactive video session with a human operator. Upon availability of the human operator at one of

3NSDOCID: <WO___9912100A1_I_>

the multiple multimedia operator consoles 202,204,206 the interactive video session is conducted. Upon termination of the interactive multimedia session, the connection is taken down and the next queued interactive multimedia session is initiated.

Multimedia operator consoles 202,204,206 and customer terminals 102,106,110,136,136 are equipped with appropriate multimedia equipment and software. Typical equipment includes commercial off the shelf microphones/headsets with speakers, digital signal processor based peripheral sound cards and a video camera with its video interface to the terminals and consoles.

When the customer initiates the interactive multimedia session the content of the customer's screen is accessible by the agent on the multimedia operator console. The session participants are also able to view each other through the video camera output portion of the link and are able to converse audibly to conduct business.

The customer agent is able to see exactly what the customer is trying to describe and is therefore capable of answering questions and solving problems in a much more time efficient manner without tying up more resources.

The customer agent is able to diagnose conditions and problems on a customer's computer in real-time or near

BNSDOCID: <WO___9912100A1_I_>

real-time and can download software to determine configurations, correct errors, modify settings and add or delete software modules as desired. Of course, the multimedia response server automates many of these functions and does not require a human customer agent in many of these situations.

Referring now to Fig. 3, the methodology 300 of the present invention will now be discussed. The process begins in step 302 with the program Start function. In step 304, the Web server makes the Web page available to customers over the Internet or any other suitable public or private data network.

A Customer accesses the Web page from his/her computer terminal using the appropriate physical connection and software.

As an example, if the Web page is for a travel agent, the customer could search for airline flights to a desired destination at a particular time and for a particular price. If the specific parameters defined do not result in a satisfactory result for the customer, or if at any time during a session live human interaction is desired or required, then the customer clicks on the graphical hot button or link and is transferred in step 308 by an automatic distribution mechanism via the above described invention to a

live interactive multimedia session in step 310 in an effort to satisfy the customer's request. Upon completion of the session, control passes to step 312, Stop.

Other such embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is readily apparent that the above described invention may be implemented in other types of data networks, public and private, including an intranet or an internet, whereby these terms denote an either an internal network of computers or any internetworking of communication devices. It is intended that the specification and examples be considered as exemplary only, with a true scope and spirit of the invention being indicated by the following claims.

CLAIMS

1. An apparatus for conducting a multimedia communication over a data communications network comprising:

means for receiving an incoming query from an external user;

means for identifying said incoming query as a multimedia call request;

means for generating a multimedia communication.

2. An apparatus for conducting a multimedia communication over a data communications network as in claim 1 wherein said data communications network is characterized by a switching mechanism operably connected to a first server control mechanism for passing data to an operations console for communication processing.

3. An apparatus for conducting a multimedia communication over a data communications network as in claim 2 wherein said data communication network includes an interactive capability.

4. An apparatus for conducting a multimedia communication over a data communications network as in claim 3 wherein said data communication network includes a real time capability.

5. An apparatus for conducting a multimedia communication over a data communications network as in claim 3 wherein said

data communication network includes at least a near real time capability.

6. An apparatus for conducting a multimedia communication over a data communication network as in claim 5 further includes means for automatically distributing said incoming query to one of a particular destination based on a predetermined criteria.

7. An apparatus for conducting a multimedia communication over a data communication network as in claim 6 wherein said particular destination is internal to said network.

8. An apparatus for conducting a multimedia communication over a data communication network as in claim 6 wherein said particular destination is external to said network.

9. An apparatus for conducting a multimedia communication over a data communication network as in claim 6 wherein said particular destination is an interactive station for conducting a customer service transaction.

10. An apparatus for conducting a multimedia communication over a data communication network as in claim 9 further including a second server control mechanism for passing data to said switching mechanism for routing to an external destination.

11. A method for conducting a multimedia communication over a data communications network comprising the steps of:

receiving an incoming query from an external user;

identifying said incoming query as a multimedia call request;

generating a multimedia communication.

12. A method for conducting a multimedia communication over a data communications network as in claim 11 wherein said data communications network further including the step of having a first switching mechanism operably connected to a server control mechanism passing data to an operations console for communication processing.

13. A method for conducting a multimedia communication over a data communications network as in claim 12 wherein said data communication network includes the step of having an interactive capability.

14. A method for conducting a multimedia communication over a data communications network as in claim 13 wherein said data communication network includes the step of interacting in a real time mode.

15. A method for conducting a multimedia communication over a data communications network as in claim 13 wherein said data communication network includes the step of interacting in an at least near real time mode.

16. A method for conducting a multimedia communication over a data communication network as in claim 15 further includes

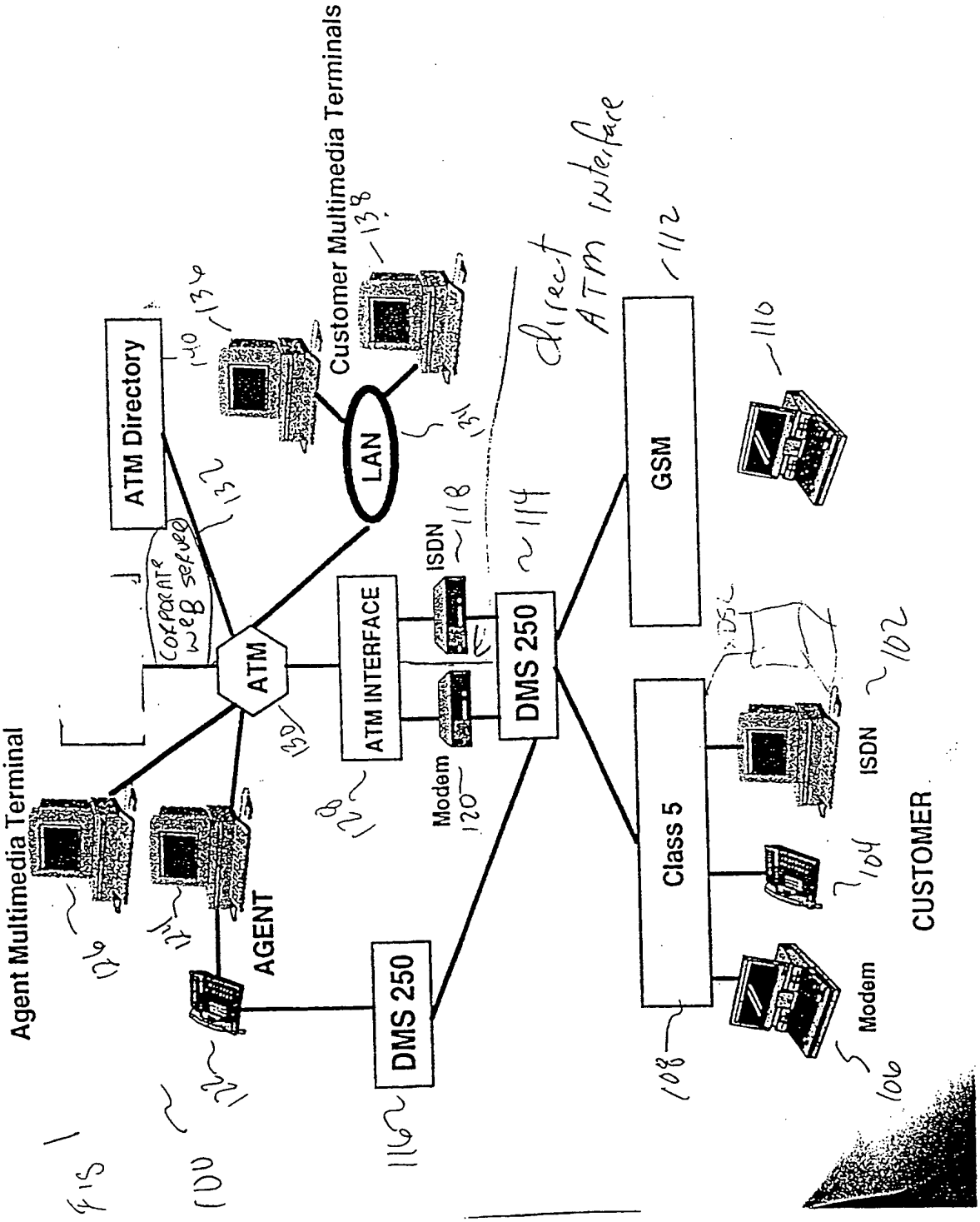
the step of automatically distributing said incoming query to one of a particular destination based on a predetermined criteria.

17. A method for conducting a multimedia communication over a data communication network as in claim 16 wherein said particular destination is internal to said network.

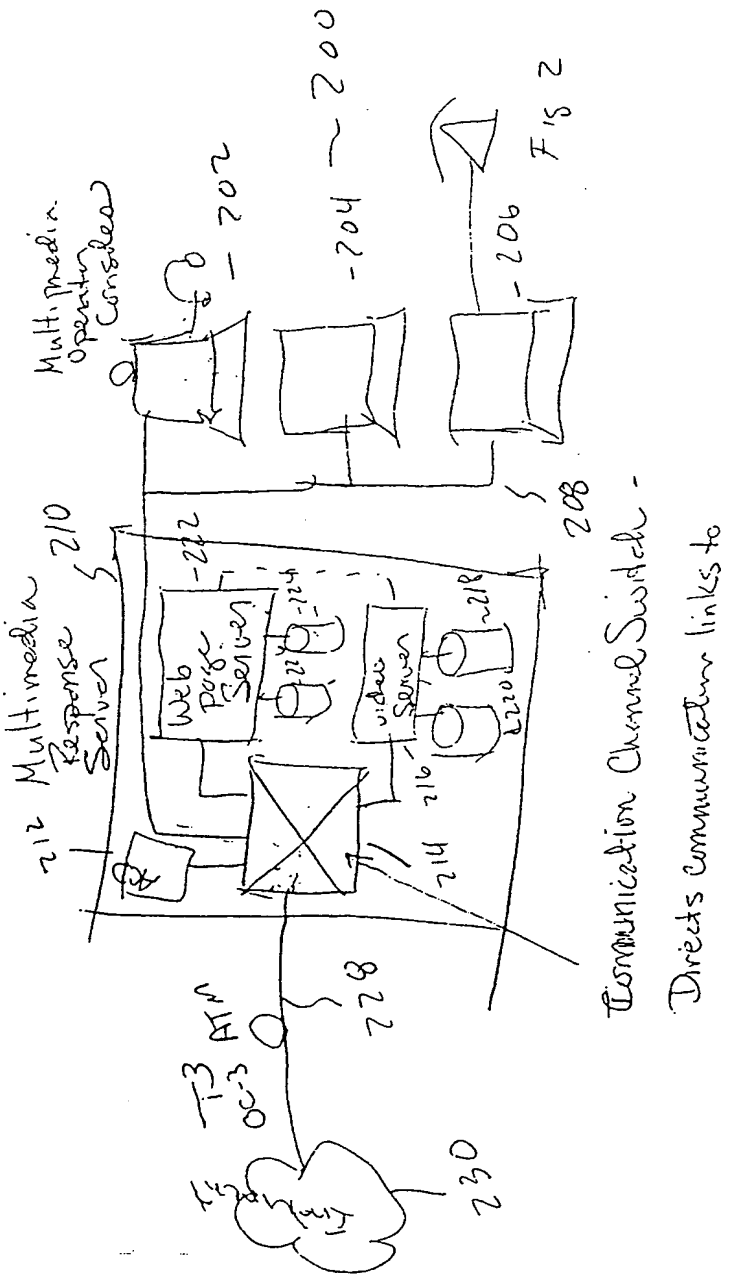
18. A method for conducting a multimedia communication over a data communication network as in claim 16 wherein said particular destination is external to said network.

19. A method for conducting a multimedia communication over a data communication network as in claim 16 wherein said particular destination is an interactive station for conducting a customer service transaction.

20. A method for conducting a multimedia communication over a data communication network as in claim 19 further including the step of having a second server control mechanism pass data to said switching mechanism for routing to an external destination.



BNSDOCID: <WO___9912100A1_I_>



BNSDOCID: <WO___9912100A1_I_>

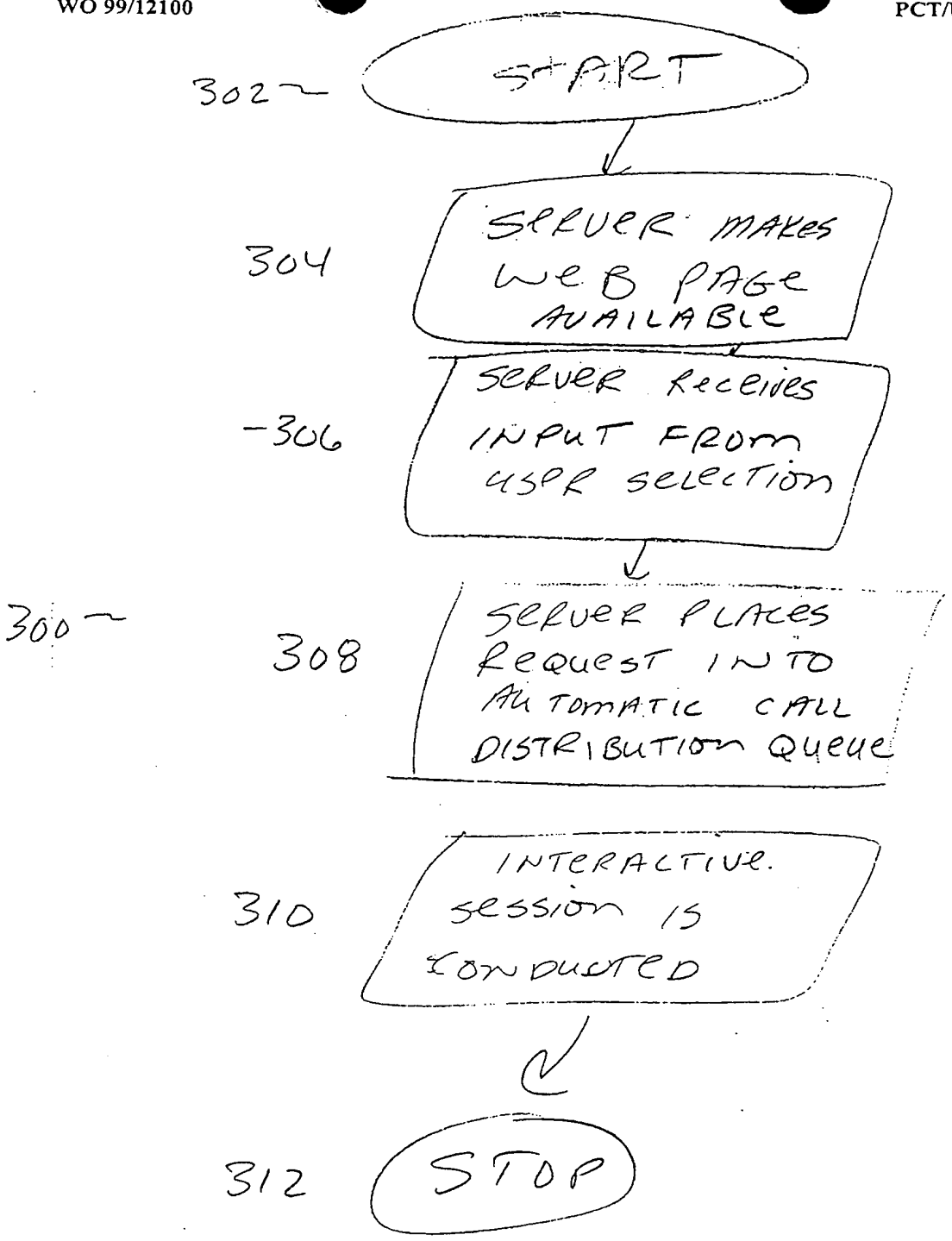


Fig 3

BNSDOCID: <WO___9912100A1_I_>

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/14089

A. CLASSIFICATION OF SUBJECT MATTER
IPC(6) :G06F 13/00
US CL :Please See Extra Sheet.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 395/200.33, 200.34, 200.36, 200.47, 200.48, 200.49, 200.57, 200.58

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS & DIALOG
multimedia communication#, real time, on line, internet, web page

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	US 5,778,178 A (ARUNACHALAM) 07 JULY 1998, THE ABSTRACT, LINES 2-3, COL 2, LINES 34-44, COL 5, LINES 20-67, COL 6, COL 7, LINES 4-33, LINES 48-57, COL 9, LINES 9-11, LINES 25-40.	1-20
A	US 5,796,393 A (MACNAUGHTON ET AL) 18 AUGUST 1998, COL 1, LINES 25-27, COL 2, LINES 43-45, COL 3, LINES 59-67, COL 4, LINES 19-24, COL 5, LINES 48-60, COL 8, LINES 10-23.	1-20
A	US 5,806,043 A (TOADER) 08 SEPTEMBER 1998, THE ABSTARCT, COL 2, LINES 8-67, COL 3, LINES 12-16, COL 4, LINES 13-18, LINES 40-57, COL 6, LINES 2-11.	1-20

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search	Date of mailing of the international search report
07 OCTOBER 1998	09 NOV 1998
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer MOUSTAFA M. MEKY Telephone No. (703) 305-9697

Form PCT/ISA/210 (second sheet)(July 1992)*

BNSDOCID: <WO___9912100A1_I_>

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/14089

A. CLASSIFICATION OF SUBJECT MATTER:
US CL :

395/200.33, 200.34, 200.36, 200.47, 200.48, 200.49, 200.57, 200.58

Form PCT/ISA/210 (extra sheet)(July 1992)★

BNSDOCID: <WO___9912100A1_I_>

CORRECTED VERSION*

PCT

WORLD INTELLECTUAL PROPERTY ORGANIZATION
International Bureau

INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification 6 : G06F 13/00

A1

(11) International Publication Number: WO 99/12100

(43) International Publication Date: 11 March 1999 (11.03.99)

(21) International Application Number: PCT/US98/14089

(22) International Filing Date: 8 July 1998 (08.07.98)

(30) Priority Data:
08/921,006 29 August 1997 (29.08.97) US

(71) Applicant *(for all designated States except US)*: NORTHERN TELECOM LIMITED [CA/CA]; World Trade Center of Montreal, 8th floor, 380 St. Antoine Street West, Montreal, Quebec H2Y 3Y4 (CA).

(72) Inventor; and

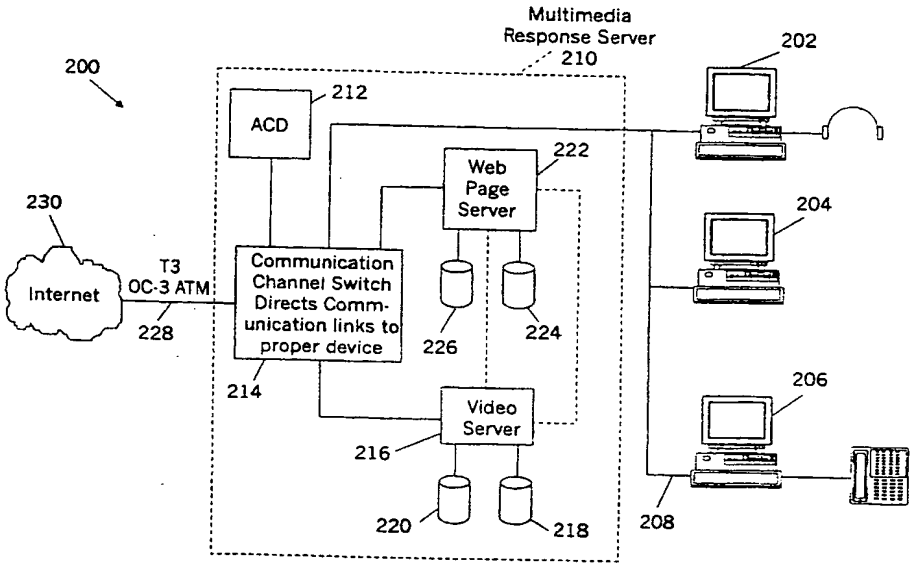
(75) Inventor/Applicant *(for US only)*: STOVALL, Gregory, T. [US/US]; 801 Blossom Road, Garland, TX 75041 (US).

(74) Agent: EDWARDS, Christopher, O.; Northern Telecom, Patent Dept., P.O. Box 832130, Richardson, TX 75083–2130 (US).

(81) Designated States: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GE, GH, GM, HU, ID, IL, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZW, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published
With international search report.

(54) Title: METHOD AND APPARATUS FOR WEB INQUIRY RESPONSE VIA INTERNET VIDEO



(57) Abstract

An interactive data communication user is connected through a network (230) to a multimedia response server (210). The user presses an appropriate keyboard or mouse clicks on an appropriately labeled button on a data page. An automatic call distribution device (212) switches the session to a customer service queue for routing to the next available customer service representative (202). When the interactive session between the user and the customer device representative (202) is completed, session control passes back to the data page server (222) and a normal interactive session is resumed.

*(Referred to in PCT Gazette No. 20/1999, Section II)

BNSDOCID: <WO___9912100A1_IA>

FOR THE PURPOSES OF INFORMATION ONLY

Codes used to identify States party to the PCT on the front pages of pamphlets publishing international applications under the PCT.

AL	Albania	**ES**	Spain	**LS**	Lesotho	**SI**	Slovenia
AM	Armenia	**FI**	Finland	**LT**	Lithuania	**SK**	Slovakia
AT	Austria	**FR**	France	**LU**	Luxembourg	**SN**	Senegal
AU	Australia	**GA**	Gabon	**LV**	Latvia	**SZ**	Swaziland
AZ	Azerbaijan	**GB**	United Kingdom	**MC**	Monaco	**TD**	Chad
BA	Bosnia and Herzegovina	**GE**	Georgia	**MD**	Republic of Moldova	**TG**	Togo
BB	Barbados	**GH**	Ghana	**MG**	Madagascar	**TJ**	Tajikistan
BE	Belgium	**GN**	Guinea	**MK**	The former Yugoslav Republic of Macedonia	**TM**	Turkmenistan
BF	Burkina Faso	**GR**	Greece			**TR**	Turkey
BG	Bulgaria	**HU**	Hungary	**ML**	Mali	**TT**	Trinidad and Tobago
BJ	Benin	**IE**	Ireland	**MN**	Mongolia	**UA**	Ukraine
BR	Brazil	**IL**	Israel	**MR**	Mauritania	**UG**	Uganda
BY	Belarus	**IS**	Iceland	**MW**	Malawi	**US**	United States of America
CA	Canada	**IT**	Italy	**MX**	Mexico	**UZ**	Uzbekistan
CF	Central African Republic	**JP**	Japan	**NE**	Niger	**VN**	Viet Nam
CG	Congo	**KE**	Kenya	**NL**	Netherlands	**YU**	Yugoslavia
CH	Switzerland	**KG**	Kyrgyzstan	**NO**	Norway	**ZW**	Zimbabwe
CI	Côte d'Ivoire	**KP**	Democratic People's Republic of Korea	**NZ**	New Zealand		
CM	Cameroon			**PL**	Poland		
CN	China	**KR**	Republic of Korea	**PT**	Portugal		
CU	Cuba	**KZ**	Kazakstan	**RO**	Romania		
CZ	Czech Republic	**LC**	Saint Lucia	**RU**	Russian Federation		
DE	Germany	**LI**	Liechtenstein	**SD**	Sudan		
DK	Denmark	**LK**	Sri Lanka	**SE**	Sweden		
EE	Estonia	**LR**	Liberia	**SG**	Singapore		

BNSDOCID: <WO___9912100A1_IA>

METHOD AND APPARATUS FOR WEB INQUIRY RESPONSE VIA INTERNET VIDEO

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates generally to customer response networks and in particular to internet based response networks.

DESCRIPTION OF THE RELATED ART

Many companies establish and maintain home pages on the Internet's World Wide Web. These home pages may provide an electronic market place to users with a computer, appropriate software and internet access. Companies may set up layered directories that provide information in the form of electronic catalogs or brochures. Often a point of contact such as a telephone number or electronic mail address is provided as a link in the event a user requires more information or has a question for the company.

Current data services on the Web are interactive in the sense that information content is provided to a user based on keyboard or mouse input from that user. However, this response is limited to pre-programmed or "canned" text, video and/or audio. As services migrate to higher bandwidth requirements and capabilities there is an increasing demand for interactive videophone sessions.

There is accordingly a need for a new method and apparatus to provide an interactive live video session capability between a user and a company's representative in order to facilitate the transfer of information in an effective real-time manner.

SUMMARY OF THE INVENTION

The method and apparatus of the present invention is accomplished by having a customer or user situated at one of many user computer terminals connected to the Internet. The user accesses a company's World Wide Web Internet home page in an Internet session and decides that more information is needed and would appreciate interacting with a live customer service representative.

The user presses an appropriate keyboard or mouse clicks on an appropriately labeled button on the Web page. An automatic call distribution device switches the session to a customer service queue for routing to the next available customer service representative. When the interactive session between the user and the customer service representative is completed, session control passes back to the web page server and a normal interactive session is resumed.

One advantage of the present invention allows the user and customer service representative to conduct an interactive video session.

Another advantage of the present invention allows the user and customer service representative to conduct an interactive audio session.

Another advantage of the present invention allows the user and customer service representative to conduct an interactive audio/video session.

Still another advantage of the present invention allows the user and customer service representative to both simultaneously view portions of the same display on each of their respective video display monitors.

Further features of the above-described invention will become apparent from the detailed description hereinafter.

The foregoing features together with certain other features described hereinafter enable the overall system to have properties differing not just by a matter of degree from any related art, but offering an order of magnitude more efficient use of processing time and resources.

Additional features and advantages of the invention will be set forth in part in the description which follows, and in part will be apparent from the description, or may be learned by practice of the invention. The advantages of the invention will be realized and attained by means of the

elements and combinations particularly pointed out in the appended claims.

It is to be understood that both the foregoing general description and the following detailed description are exemplary and explanatory only and are not restrictive of the invention, as claimed.

The accompanying drawings, which are incorporated in and constitute a part of this specification, illustrate preferred embodiments of the apparatus and method according to the invention and, together with the description, serve to explain the principles of the invention.

BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 illustrates a block diagram of the data network of the present invention.

Fig. 2 illustrates a block diagram of the multimedia response server of the present invention.

Fig. 3 illustrates a flowchart depiction of the methodology of the present invention.

DETAILED DESCRIPTION

Referring now to Fig. 1, the data network 100 of the present invention will now be discussed. A customer or user is situated at one of many user terminals 102,106,110,136,138 which may be a personal computer, graphic

enhanced mobile device such as a laptop PC, Java phone or a personal digital assistant (PDA).

The customer may be connected via an analog or digital (either an Integrated Services Digital Network (ISDN) or xDSL) connection to a Class 5 (local telephone switching) office 108, which in turn is connected to a tandem switch 114. Tandem switch 114 is capable of making both local and toll (long distance) telephone connections and is connected through modem 120, direct connection or ISDN 118 connection to Asynchronous Transfer Mode (ATM) interface 128.

ATM interface 128 is connected to ATM backbone 130. ATM backbone 130 supplies the interconnections and transport mechanisms of the data communications network, or Internet of the preferred embodiment. These transport mechanisms are well known and thus need not be further explained here.

Customers are also connected through terminals 136,138 to the Internet embodied by ATM backbone 130 through Local Area Network (LAN) 134. LAN direct connectivity is an alternative to dial-up connections.

A live person acting as a Company's agent or customer service representative is stationed at agent terminal 124. Terminal 124 contains an autodialer which automatically dials a preprogrammed or an entered telephone number from telephone 122. This telephone number is the

telephone number of the customer who has entered his/her own telephone number sometime during a Web page access session.

The telephone call placed by the Customer service agent located at terminal 124 through telephone 122 is switched through tandem switch 116 to class 5 central office 104 to the customer.

In an alternative embodiment, a customer may be connected through a mobile terminal via a wireless data link provided by a cellular, PCS or other wireless service provider.

Corporate Web Server 132 is connected to ATM backbone 130 through a direct connection.

In an alternate embodiment, the corporate Web Server, stationary or mobile, may also be connected via a similar wireless data link interfaced to the Internet.

Referring now to Fig. 2, Corporate Web Server 200 will now be discussed in further detail. Multimedia response server 210 is connected to the Internet 230 via ATM link 228. ATM link 228 is typically either across a T-3 carrier operating at approximately 44 MHz or is an OC-48 (or higher) Synchronous Optical Network (SONET) connection. The details of such connections are well known and need not be discussed further.

The T-3 interconnection 228 interconnects with Multimedia Response Server 210 at the communication channel switch 214. Communication channel switch 214 is controlled by Web page server 222. Also connected to communication channel switch 214 are the Automatic Call Distribution (ACD) unit 212, video server 216 and multiple multimedia operator consoles 202,204,206.

Communication channel switch 214 is a Northern Telecom Magellan, Vector or other suitable switch.

Web page server 222 operates to supply content to customers who access the Web page, controls connections to and from communication channel switch 214.

Video server 216 supplies high bandwidth video to customers accessing the Web page through communication channel switch 214.

Automatic Call Distribution (ACD) 212 unit operates by transferring a customer who has requested more information into a queue for service by the next available operator stationed at one of the multimedia operator consoles 202,204,206. A customer who is accessing the Web page on the Web server typically mouse clicks on a hot button or link found on the Web page. This link is identified as a channel for selecting a live interactive video session with a human operator. Upon availability of the human operator at one of

the multiple multimedia operator consoles 202,204,206 the interactive video session is conducted. Upon termination of the interactive multimedia session, the connection is taken down and the next queued interactive multimedia session is initiated.

Multimedia operator consoles 202,204,206 and customer terminals 102,106,110,136,136 are equipped with appropriate multimedia equipment and software. Typical equipment includes commercial off the shelf microphones/headsets with speakers, digital signal processor based peripheral sound cards and a video camera with its video interface to the terminals and consoles.

When the customer initiates the interactive multimedia session the content of the customer's screen is accessible by the agent on the multimedia operator console. The session participants are also able to view each other through the video camera output portion of the link and are able to converse audibly to conduct business.

The customer agent is able to see exactly what the customer is trying to describe and is therefore capable of answering questions and solving problems in a much more time efficient manner without tying up more resources.

The customer agent is able to diagnose conditions and problems on a customer's computer in real-time or near

real-time and can download software to determine configurations, correct errors, modify settings and add or delete software modules as desired. Of course, the multimedia response server automates many of these functions and does not require a human customer agent in many of these situations.

Referring now to Fig. 3, the methodology 300 of the present invention will now be discussed. The process begins in step 302 with the program Start function. In step 304, the Web server makes the Web page available to customers over the Internet or any other suitable public or private data network.

A Customer accesses the Web page from his/her computer terminal using the appropriate physical connection and software.

As an example, if the Web page is for a travel agent, the customer could search for airline flights to a desired destination at a particular time and for a particular price. If the specific parameters defined do not result in a satisfactory result for the customer, or if at any time during a session live human interaction is desired or required, then the customer clicks on the graphical hot button or link and is transferred in step 308 by an automatic distribution mechanism via the above described invention to a

live interactive multimedia session in step 310 in an effort to satisfy the customer's request. Upon completion of the session, control passes to step 312, Stop.

Other such embodiments of the invention will be apparent to those skilled in the art from consideration of the specification and practice of the invention disclosed herein. It is readily apparent that the above described invention may be implemented in other types of data networks, public and private, including an intranet or an internet, whereby these terms denote an either an internal network of computers or any internetworking of communication devices. It is intended that the specification and examples be considered as exemplary only, with a true scope and spirit of the invention being indicated by the following claims.

CLAIMS

1. An apparatus for conducting a multimedia communication over a data communications network comprising:

means for receiving an incoming query from an external user;

means for identifying said incoming query as a multimedia call request;

means for generating a multimedia communication.

2. An apparatus for conducting a multimedia communication over a data communications network as in claim 1 wherein said data communications network is characterized by a switching mechanism operably connected to a first server control mechanism for passing data to an operations console for communication processing.

3. An apparatus for conducting a multimedia communication over a data communications network as in claim 2 wherein said data communication network includes an interactive capability.

4. An apparatus for conducting a multimedia communication over a data communications network as in claim 3 wherein said data communication network includes a real time capability.

5. An apparatus for conducting a multimedia communication over a data communications network as in claim 3 wherein said

data communication network includes at least a near real time capability.

6. An apparatus for conducting a multimedia communication over a data communication network as in claim 5 further includes means for automatically distributing said incoming query to one of a particular destination based on a predetermined criteria.

7. An apparatus for conducting a multimedia communication over a data communication network as in claim 6 wherein said particular destination is internal to said network.

8. An apparatus for conducting a multimedia communication over a data communication network as in claim 6 wherein said particular destination is external to said network.

9. An apparatus for conducting a multimedia communication over a data communication network as in claim 6 wherein said particular destination is an interactive station for conducting a customer service transaction.

10. An apparatus for conducting a multimedia communication over a data communication network as in claim 9 further including a second server control mechanism for passing data to said switching mechanism for routing to an external destination.

11. A method for conducting a multimedia communication over a data communications network comprising the steps of:

BNSDOCID: <WO___9912100A1_IA>

receiving an incoming query from an external user;

identifying said incoming query as a multimedia call request;

generating a multimedia communication.

12. A method for conducting a multimedia communication over a data communications network as in claim 11 wherein said data communications network further including the step of having a first switching mechanism operably connected to a server control mechanism passing data to an operations console for communication processing.

13. A method for conducting a multimedia communication over a data communications network as in claim 12 wherein said data communication network includes the step of having an interactive capability.

14. A method for conducting a multimedia communication over a data communications network as in claim 13 wherein said data communication network includes the step of interacting in a real time mode.

15. A method for conducting a multimedia communication over a data communications network as in claim 13 wherein said data communication network includes the step of interacting in an at least near real time mode.

16. A method for conducting a multimedia communication over a data communication network as in claim 15 further includes

the step of automatically distributing said incoming query to one of a particular destination based on a predetermined criteria.

17. A method for conducting a multimedia communication over a data communication network as in claim 16 wherein said particular destination is internal to said network.

18. A method for conducting a multimedia communication over a data communication network as in claim 16 wherein said particular destination is external to said network.

19. A method for conducting a multimedia communication over a data communication network as in claim 16 wherein said particular destination is an interactive station for conducting a customer service transaction.

20. A method for conducting a multimedia communication over a data communication network as in claim 19 further including the step of having a second server control mechanism pass data to said switching mechanism for routing to an external destination.

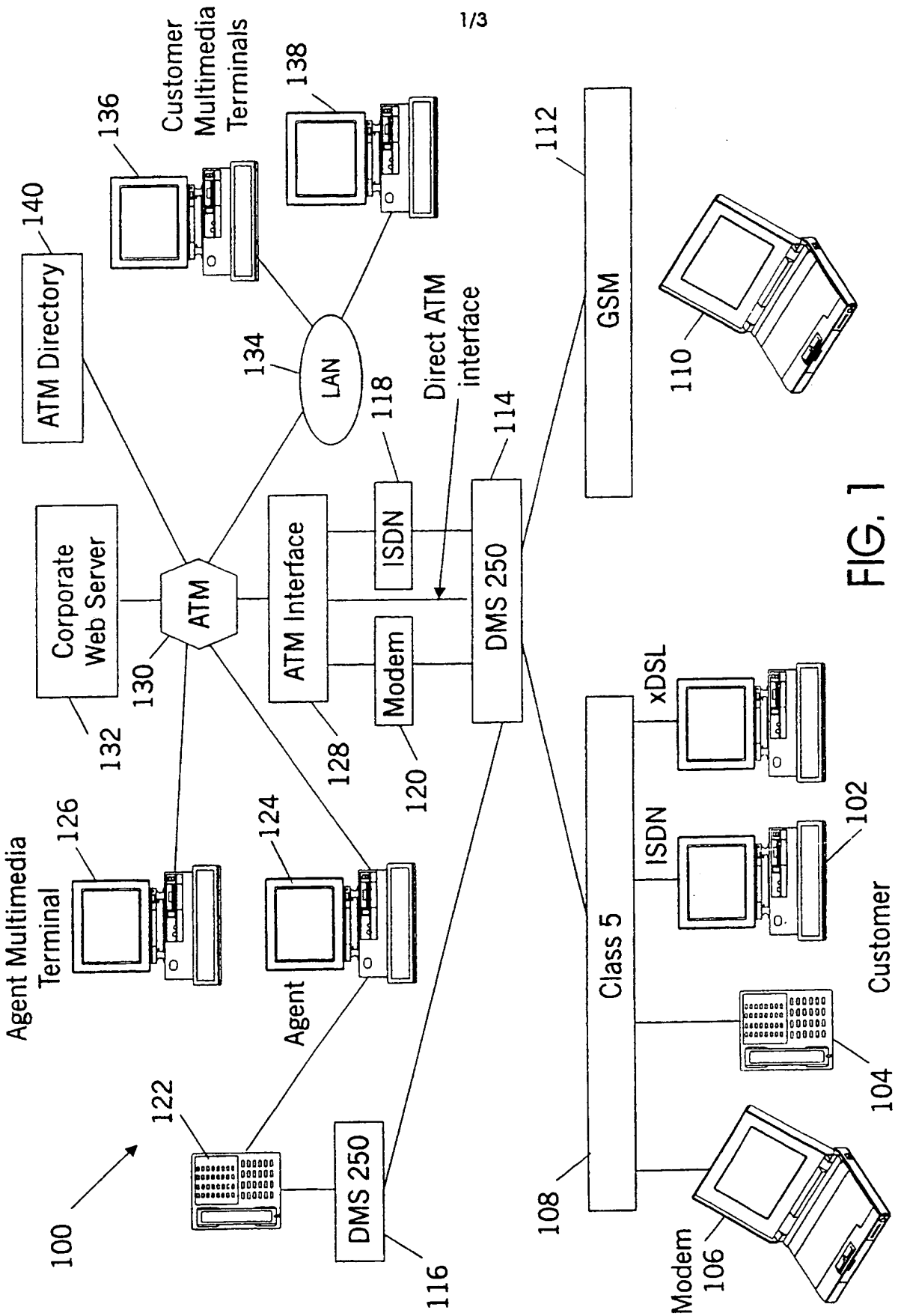


FIG. 1

BNSDOCID: <WO___9912100A1_IA>

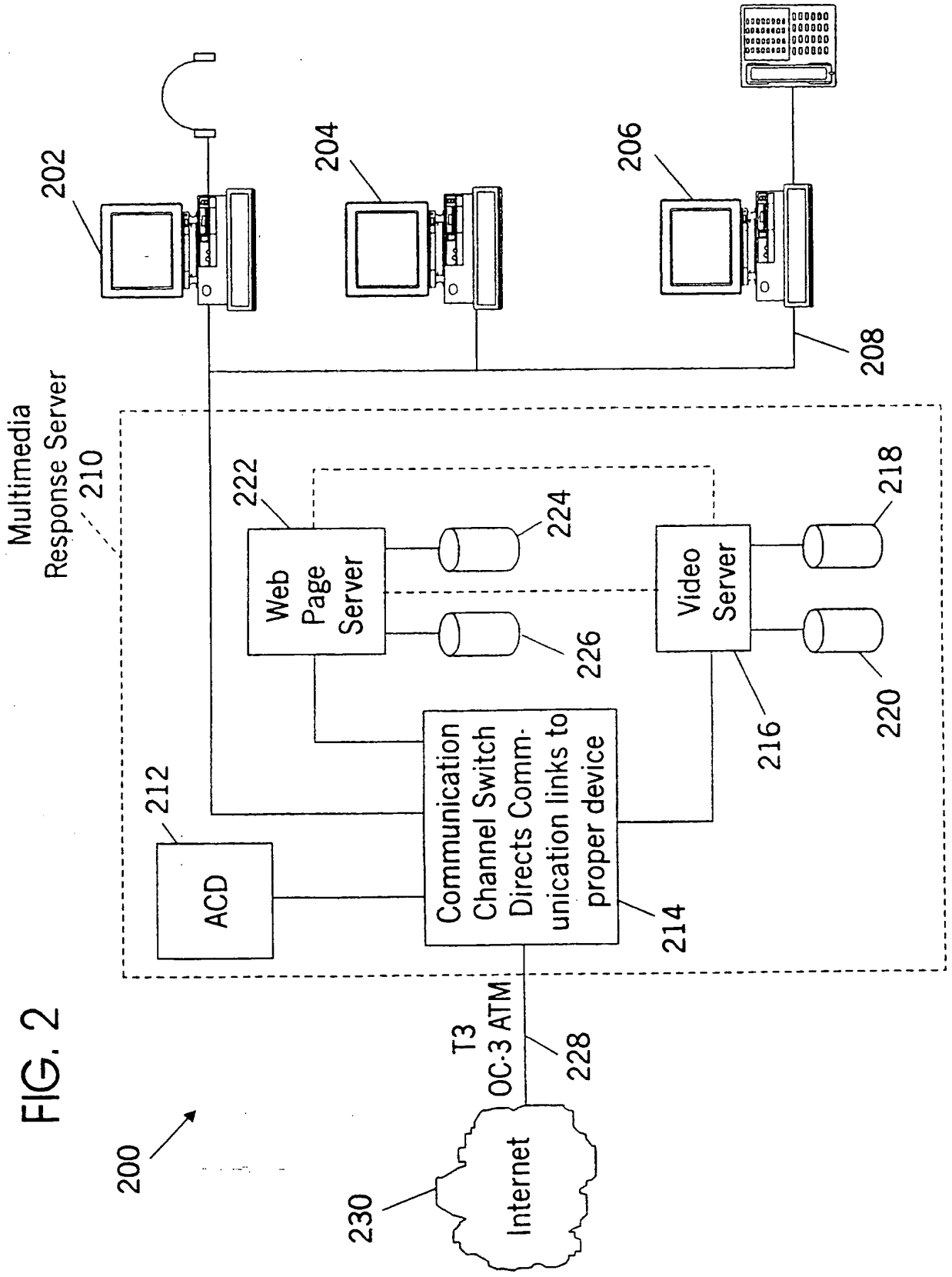
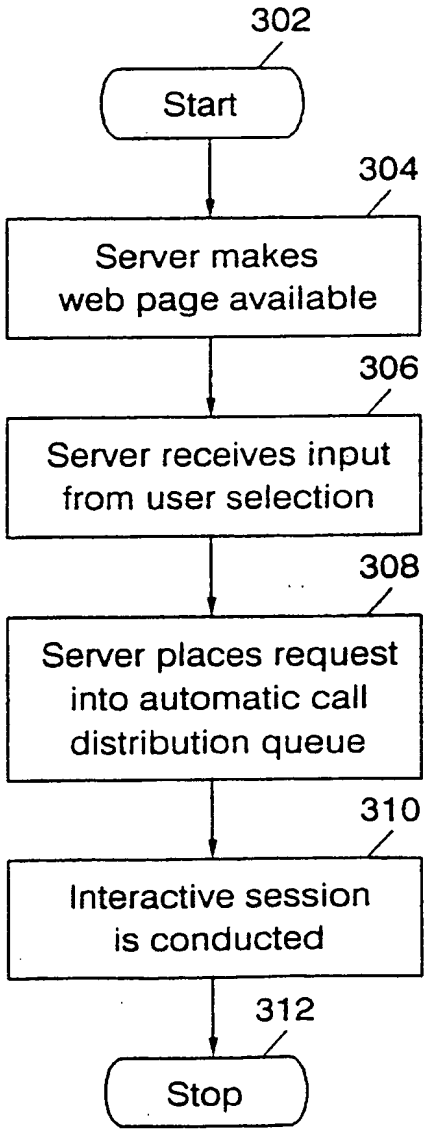


FIG. 2

BNSDOCID: <WO___9912100A1_IA>

FIG. 3



BNSDOCID: <WO___9912100A1_IA>

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/14089

A. CLASSIFICATION OF SUBJECT MATTER
IPC(6) :G06F 13/00
US CL :Please See Extra Sheet.
According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 395/200.33, 200.34, 200.36, 200.47, 200.48, 200.49, 200.57, 200.58

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

APS & DIALOG
multimedia communication#, real time, on line, internet, web page

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X,P	US 5,778,178 A (ARUNACHALAM) 07 JULY 1998, THE ABSTRACT, LINES 2-3, COL 2, LINES 34-44, COL 5, LINES 20-67, COL 6, COL 7, LINES 4-33, LINES 48-57, COL 9, LINES 9-11, LINES 25-40.	1-20
A	US 5,796,393 A (MACNAUGHTON ET AL) 18 AUGUST 1998, COL 1, LINES 25-27, COL 2, LINES 43-45, COL 3, LINES 59-67, COL 4, LINES 19-24, COL 5, LINES 48-60, COL 8, LINES 10-23.	1-20
A	US 5,806,043 A (TOADER) 08 SEPTEMBER 1998, THE ABSTARCT, COL 2, LINES 8-67, COL 3, LINES 12-16, COL 4, LINES 13-18, LINES 40-57, COL 6, LINES 2-11.	1-20

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

*	Special categories of cited documents:	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"A"	document defining the general state of the art which is not considered to be of particular relevance	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"E"	earlier document published on or after the international filing date	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"L"	document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"&"	document member of the same patent family
"O"	document referring to an oral disclosure, use, exhibition or other means		
"P"	document published prior to the international filing date but later than the priority date claimed		

Date of the actual completion of the international search 07 OCTOBER 1998	Date of mailing of the international search report 09 NOV 1998
Name and mailing address of the ISA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer MOUSTAFA M. MEKY Telephone No. (703) 305-9697

Form PCT/ISA/210 (second sheet)(July 1992)*

BNSDOCID: <WO___9912100A1_IA>

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/14089

A. CLASSIFICATION OF SUBJECT MATTER:
US CL :

395/200.33, 200.34, 200.36, 200.47, 200.48, 200.49, 200.57, 200.58

Form PCT/ISA/210 (extra sheet)(July 1992)*

BNSDOCID: <WO___9912100A1_IA>

THIS PAGE BLANK (USPTO)